REMARKS

Applicant concurrently files herewith a Notice of Change of Name.

Claims 17-47 are all the claims presently pending in the application. Claims 17-47 have been amended to more particularly define the invention.

It is noted that the claim amendments are made only for more particularly pointing out the invention, and not for distinguishing the invention over the prior art, narrowing the claims or for any statutory requirements of patentability. Further, Applicant specifically states that no amendment to any claim herein should be construed as a disclaimer of any interest in or right to an equivalent of any element or feature of the amended claim.

Claims 17-47 stand rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement. Claims 17-47 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite. Claims 17-47 stand rejected on the ground of obviousness-type double patenting as being unpatentable over claims 1, 2, 6, 10, 17-19, 22-24, 27-33, 37-39 and 43-45 of U.S. Patent No. 6,756,187. Claims 17-47 stand provisionally rejected on the ground of nonstatutory obviousness-type double patenting rejection as being unpatentable over claim 1-4, 7, 9-14, 17 and 19-21.

These rejections are respectfully traversed in the following discussion.

I. THE CLAIMED INVENTION

The claimed invention (e.g., as defined by exemplary claim 17) is directed to a process for treating a substrate.

The claimed process includes forming an organic layer on the substrate and reflowing the organic layer at a substrate temperature from 15 degrees to 40 degrees centigrade.

Conventional photo-resists mask removal techniques include dry cleaning techniques (e.g., dry ashing) and wet cleaning techniques (e.g., chemical dippining). Additionally, a compromise between the dry cleaning and wet cleaning techniques has been developed, which includes a preliminary treatment before the dry cleaning technique.

Typically, the dry cleaning techniques are time consuming, resulting in a low throughput. Similarly, the wet cleaning techniques result in a large amount of chemical waste material and are also time consuming. With the compromise technique, however, a residual solution is left on the semiconductor wafer, which requires an additional rinsing step to remove the solution.

The claimed invention of exemplary claim 17, on the other hand, provides a process for treating a substrate including reflowing the organic layer at a substrate temperature from 15 degrees to 40 degrees centigrade (e.g., see Application at page 11, lines 11-15). The claimed process, including this feature, provides a substrate treating process having a large throughput, which is almost free from residual contaminant (see Application at page 3, lines 4-6).

II. THE 35 USC §112, FIRST PARAGRAPH, REJECTION

The Examiner alleges that the specification fails to provide an enabling disclosure for the claimed invention of claims 17-47. Specifically, the Examiner alleges that the

specification does not provide an enabling disclosure for "reflowing an organic layer" (as claimed in claims 17-47; see Office Action dated April 19, 2006 at page 2), "reflowing at a temperature of 15 to 40 degrees Centigrade" (as recited in claims 17-47; see Office Action dated April 19, 2006 at page 2), and "the thickness of the deformed organic layer being one-third or less of the thickness of the organic layer" (as recited in claims 19, 29, 31 and 40; see Office Action dated April 19, 2006 at page 3).

Applicant points out that the standard for determining whether a claim is enabled by the disclosure is whether "the disclosure, when filed, contained sufficient information regarding the subject matter of the claims as to enable one skilled in the pertinent art to make and use the claimed invention". Specifically, the standard, as set forth in the M.P.E.P., is whether one of ordinary skill would be required to conduct undue experimentation to practice the claimed invention (see M.P.E.P. § 2164.01).

In the enablement rejection, the Examiner alleges that "the specification, while being enabling for reflowing a patterned organic layer, does not reasonably provide enablement for reflowing an organic layer (i.e., not patterned)" (see Office Action dated April 19, 2006 at page 2). The Examiner points to page 4 of the specification that refers to reflowing a patterned organic layer. The Examiner, however, is clearly incorrect.

That is, when rejecting the claimed invention on the basis of failing to comply with the enablement requirement, the Examiner must consider the entire specification. The specification repeatedly discusses "removing an organic layer" and reflow of the "organic layer" (e.g., see Application at page 3, lines 4-14 and page 14, lines 1-3). Thus, one of ordinary skill in the art would clearly have been enabled to practice the process of the claimed invention, without undue experimentation.

Furthermore, the Examiner alleges that "the specification, while being enabling for reflowing by exposure to an organic solvent or heat, does not reasonably provide enablement for reflowing at a temperature of 15 to 40 degrees Centigrade" (see Office Action dated April 19, 2006 at page 2). The Examiner, however, is clearly incorrect.

That is, the specification clearly discloses that the patterned photo-resist layer is reflowed while the temperature of the substrate is in a range of from 15 degrees Centrigrade to 40 degrees Centigrade (see Application at page 11, lines 11-15).

Additionally, if the Examiner wishes to maintain these rejections, Applicant points out that the initial burden is on the examiner to establish a reasonable basis for questioning the adequacy of the disclosure to make and use the claimed invention without resorting to undue experimentation (see M.P.E.P. §2164.04). Therefore, if the Examiner wishes to maintain these rejections, Applicant respectfully requests to the Examiner to specifically address the undue experimentation requirement, which forms the basis for the standard of review for the enablement requirement.

Regarding the Examiner's rejection of claims 19, 29, 31 and 40, Applicant has amended claim 19 to recite "wherein said deformed organic layer is equal in thickness to or less than a half of the thickness of said organic layer".

Therefore, in view of the above arguments and amendments, the Examiner is respectfully requested to reconsider and withdraw these rejections.

III. THE 35 USC §112, SECOND PARAGRAPH, REJECTION

The Examiner has rejected claims 17-47 as allegedly being indefinite for failing to particularly point out and distinctly claim the invention.

Applicant points out, however, that the Examiner only provides a basis of rejection for claims 23, 26, 27 and 38. Therefore, only claims 23, 26, 27 and 28 should stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. If the Examiner wishes to maintain his rejection of claims 17-47, Applicant respectfully requests the Examiner to provide a basis of rejection for each of the claims.

Furthermore, regarding claim 27, the Examiner alleges the phrase "Ar is Phenyl group or aromatic ring except said phenyl group" is indefinite. Applicant submits, however, that claim 27 does not recite this limitation. It appears the Examiner meant to refer to claim 37, which does recite this feature. Fur purposes of replying to the Examiner's rejection, Applicant has assumed that the Examiner was referring to claim 37.

Regarding claim 23, Applicant submits that the claimed invention is not indefinite. The Examiner alleges that "[i]t is not clear if this is a separate step or the same heating recited in claim 17". Furthermore, the Examiner alleges that "the specification does not teach the combination of the exposure to the organic solvent and a high-temperature exposure" (see Office Action dated April 19, 2006 at page 4). The Examiner, however, is clearly incorrect.

First, Applicant submits that claim 17 does not recite a heating step as alleged by the Examiner. Second, Applicant submits that the Application discloses the combination of exposure to a vapor containing an organic solvent and a heat application (see

Application at page 11, lines 9-11). Therefore, in view of the disclosure of the specification, Applicant submits the claimed invention of claim 23 is not indefinite.

Regarding claims 26, 37 and 28, Applicant has amended the claim language to recite "Ar comprises a phenyl group or an aromatic ring other than said phenyl group".

In view of the above claim amendments and traversal arguments, the Examiner is respectfully requested to reconsider and withdraw this rejection.

IV. THE DOUBLE PATENTING REJECTIONS

A. U.S. Patent No. 6,756,187

Claims 17-47 stand rejected under the ground of nonstatutory obviousness double-type double patenting over claims 1, 2, 6, 10, 17-19, 22-24, 27-33, 37-39 and 43-45 of U.S. Patent No. 6,756,187. Applicant submits, however, that U.S. Patent No. 6,756,187 does not claim the same invention as the present invention.

Applicant submit that the claimed invention of the Application is not an obvious variant of the invention recited in the claims of U.S. Patent No. 6,756,187. That is, the claimed invention is patentably distinct from the invention recited in the claims of U.S. Patent No. 6,756,187.

Applicant points out that when considering whether the invention defined in a claim of an application is an obvious variation of the invention defined in the claim of a patent, the disclosure of the patent may not be used as prior art. Therefore, the Examiner's analysis is limited to features recited in the claims of U.S. Patent No. 6,756,187.

U.S. Patent No. 6,756,187 claims a "method of peeling an organic layer", which includes the steps of "a preliminary treatment of the organic layer" and "peeling the organic layer".

In stark contrast, however, the claimed invention is directed to a method of treating a substrate. The method of the claimed invention recites "*forming an organic layer on said substrate*". This feature of the claimed invention is not recited in the claims of U.S. Patent No. 6,756,187. Additionally, the claims of the Application are not directed to peeling an organic layer.

Therefore, Applicant submits that the claimed invention of the Application is patentably distinct from the claims of U.S. Patent No. 6,756,187. Therefore, the Examiner is respectfully requested to reconsider and withdraw this rejection.

B. U.S. Patent Application No. 11/329,452

Claims 17-47 stand provisionally rejected under the ground of nonstatutory obviousness double-type double patenting over 1-4, 7, 9-14, 17 and 19-21 of U.S. Patent Application No. 11/329,452. Applicant submits, however, U.S. Patent Application No. 11/329,452 does not claim the same invention as the present invention.

Applicant submit that the claimed invention of the Application is not an obvious variant of the invention recited in the claims that U.S. Patent Application No. 11/329,452. That is, the claimed invention is patentably distinct from the invention recited in the claims of U.S. Patent Application No. 11/329,452.

Applicant points out that when considering whether the invention defined in a claim of an application is an obvious variation of the invention defined in the claim of a

patent application, the disclosure of the patent may not be used as prior art. Therefore, the Examiner's analysis is limited to features recited in the claims of U.S. Patent Application No. 11/329,452.

The claimed invention is directed to a method of treating a substrate. The method of the claimed invention recites "*forming an organic layer on said substrate*". This feature of the claimed invention is not recited in the claims of that U.S. Patent Application No. 11/329,452. Additionally, U.S. Patent Application No. 11/329,452 does not recite "reflowing said organic layer at a substrate temperature from 15 degrees to 40 degrees Centigrade".

Indeed, the Examiner does not even allege that U.S. Patent Application No. 11/329,452 claims this feature. U.S. Patent Application No. 11/329,452 merely recites infiltrating chemicals into an organic film. The Examiner, however, does not even address the temperature of the substrate in this rejection.

Therefore, Applicant submits that the claimed invention of the Application is patentably distinct from the claims of U.S. Patent Application No. 11/329,452. Therefore, the Examiner is respectfully requested to reconsider and withdraw this rejection.

V. FORMAL MATTERS AND CONCLUSION

In view of the foregoing, Applicant submits that claims 17-47, all the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview. The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully submitted,

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